GrummanWorld

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Grumman's Not Alone In F-14D Budget Battle

Grummanites are hoping that 28,000 coupons that arrived in the mail two weeks ago will go a long way toward redeeming the F-14D production program in the halls of Congress. So do the people who sent them: the hundreds of subcontractors across the country that supply Grumman with parts and services. These coupons are in addition to the thousands already sent in by Grummanites.

People who work for these suppliers copied the coupon that Grumman published in several newspapers last month and sent them to Grumman's Procurement Department. Procurement shipped the coupons to Grumman's Washington Operations office to deliver them to the representatives and senators named on the coupons.

"The coupons are still coming in," says Central Procurement Director Dick Maniscalco. "We got another three or four mail bags this afternoon. That's another 5,000 today."

Aeroquip Corporation, a manufacturer of fittings, couplings, and other hardware used on Grumman and most other military aircraft, was particularly strong in the coupon campaign. The company has about 1,200 employees working in Georgia, South Carolina, North Carolina, California and its headquarters in Jackson, Michigan. Three hundred and ninety coupons were sent just from Aeroquip's headquarters. "Grumman is a good customer and needs all the support we can give it," says Phil Johnston, director of sales and marketing.

But, on a broader scale, he says he is concerned that Congress might knock Grumman out of the aircraft manufacturing business. "I really think that for the good of the country we should have two prime Navy contractors. Shrinking the industrial base is something this country should not do."

Jerry Brucker, president of Bendix Wheels and Brakes in South Bend, Indiana, feels the same way. "Frankly, the F-14 line ought to be kept alive. To end up without Grumman producing Navy aircraft is not something we want to see happen."

The majority of the 850 people at Bendix, which makes the landing gear for the F-14 and the E-2C, filled out coupons for Grumman.

Maniscalco says, "This has a dramatic effect. On top of that, many of the people at these companies are getting on the phones and personally telling their congressmen and senators how concerned they are about the F-14D." For example, Bendix's Brucker had talked with his congressman and was about to mail a third letter.

Such response wasn't unexpected, says Maniscalco. "We pride ourselves on our good relationship with our suppliers. It's always been that way."

Grumman Gets Support. *Procurement Vice President Bob Simon (C), Central Procurement director Dick Maniscalco (L) and deputy director Dan Canade are shown with some 28,000 coupons sent by employees of Grumman's suppliers. (Photo by Rich Breunig)*

Grummanites Give Hochbrueckner Big Thank You

Over 600 Grummanites recently gave Congressman George Hochbrueckner (D-N.Y.) a giant "thank you" card for his hard work in the battle to save the F-14D.

The card says: "You made it happen." Rep. Hochbrueckner is a member of the House Armed Services Committee, and lobbied heavily on behalf of the F-14D. On June 28, the committee voted to include funding for 12 new F-14D's in its mark-up of the fiscal year 1990 defense budget.

The Grummanites who signed the card work for Aircraft Systems' Bethpage Operations. The card was presented to Rep. Hochbrueckner by Angela Ingino, manager of administration, and Bill Minicozzi, chief of the Bethpage crash rescue crew.

Many Thanks. *Rep. George Hochbrueckner (L) accepts card signed by over 600 Grummanites. Presenting it are Grummanites Angela Ingino and Bill Minicozzi.*

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Systems Support Signs Up Hospital Chain

LOUISVILLE, Ky. — Grumman Systems Support recently signed a contract with the home office of Humana, Inc., the nation's second-largest private hospital chain.

The Data Systems' unit will maintain Data General minicomputers and about 600 associated components, including bedside terminals, at Humana Hospital-Suburban in Louisville and at the corporation's information systems building. As a result of the contract signing, Grumman will open a new office in the Louisville area, to be staffed by two Grumman technicians.

This computer network at Humana Hospital-Suburban is one of the most advanced of its kind in the health care field. With a terminal in every room in this 380-bed facility, the system replaces the familiar patient charts used by doctors and nurses on their rounds.

"We will be responsible for the system 24 hours a day, seven days a week," says Ann Johnston, the sales rep from the St. Louis, Missouri, Systems Support office. "We'll actually be on site 12 hours a day, five days a week — on call for the balance of the time. That type of response is crucial in a hospital setting."

Grumman's contract is worth $1 million and spans three years. In addition, the contract has big growth potential.

"The contract is with the home office of Humana, which does all buying for all 80 Humana Hospitals," says Johnston. "These hospitals all use a variety of equipment, which will eventually be replaced by new hardware. Humana has discussed with Grumman the possibility of supplying the same level of support on these other new systems."

Furthermore, Grumman Systems Support recently began handling new types of business that don't fall into the "service" category, such as distribution for equipment manufacturers. When Humana learned from Johnston about Grumman's distribution agreement with Wyse Laboratories, it ordered 100 Wyse terminals — and plans to order more in the future.

The key reasons Humana chose Grumman were the wide variety of equipment maintained as well as the fact that Grumman offered a cost-competitive alternative to the manufacturer's service. Among the variety of system components is the Micom data-communications switch.

"I was using my people to maintain it themselves," says Chuck Jonus, Humana's director of central systems support. "Having Grumman on board will free them up."

Jonus says Humana-Suburban's computer system is on the "cutting edge of health information systems software." It has been under development for three years.

"It is designed to be a paperless system," he points out. "It's also fully integrated in that all clinical systems are part of the same network, such as the lab and pharmacy's systems. In addition to every room, there are terminals in critical care areas such as the emergency room and intensive care. At any point, the health care professional can access the right information about a patient."

In the usual setting, charts are kept at the nurse's station. When a nurse responds to a patient' call, he or she has to remember to update the chart upon return to the station. With the bedside computer, there's less chance of omitting that crucial step.

LLV Crew Gets Bigger Bonus

MONTGOMERY, Penn. — The Grummanites who build the Long Life Vehicles here recently finished a productive second quarter 1989 — and got bonus checks for their efforts.

This was the second quarter in the LLV plant's performance bonus plan, and the second time the Grummanites have been rewarded for their good work. In all, 550 people received bonus checks — that is everybody except officers.

The bonus plan grew out of Grumman Allied Division's first Grumman Quality project, and variations of it are expected to be adopted by other Allied Division units. The bonus amount is based on the cost savings for the quarter, divided in half, then by the number of people getting checks.

The incentive plan takes into account production efficiency, rework, scrap, maintenance, manufacturing and office-supply costs. A targets was established in 1988 for the average time it should take to build an LLV. By the end of June, the LLV crew had gone under that target by six hours.

This busy team is still delivering 95 trucks a day to the United States Postal Service. In addition, since the beginning of the year, 12 modified LLVs were delivered to the Canada Post Corporation. Canada is also buying 428 Grumman Olson Kurbmasters.

"The LLVs are the same as the American trucks, except with metric instruments and they don't have U.S. Postal Service decals," says Bob Denien, president of the Grumman LLV unit. "There are two other LLVs operating internationally: one in Saudi Arabia, which Olson delivered last year, and another in Finland, which Grumman delivered in April of this year."

In the next few months, engineers from LLV and Olson may begin working on a new project: a four-wheel-drive variation of the vehicle. This is being considered by the Postal Service for Alaskan routes.

Take A Hike, It's Good For You

"Walking is the perfect answer for exercise inertia," says Dr. Suzanne Levine, a podiatric surgeon and author of the soon-to-be-published book "Walk It Off." And she'll have even more to say about the aerobic and stress-reducing benefits of walking during a lunchtime lecture sponsored by the Medical Department on Wednesday, August 16 at noon in Headquarters theater.

The "Walk It Off" lecture is another in the health programs in Medical's "Wellness" series.

Staunch Supporter. *Rep. Roy Dyson (R) tips his new "Top Gun" hat to the Salisbury crew. During his visit there, he was presented with the hat, which has F-14 insignia on it, by Ed Urban (L), the site's director. (Photo by Ray Sander)*

Maryland Grummanites Cheer Their Congressman

When Rep. Roy Dyson (D-Md.) recently visited Grumman's Salisbury, Maryland, Electronics Systems facility, he was greeted with a banner that read: "Thanks, Roy, for your continuous support."

Dyson, a member of the House Armed Services committee, has fought to restore funding for new F-14D Tomcats to the fiscal 1990 defense budget. On June 28, the committee approved an amendment that includes funding for 12 new F-14Ds.

Addressing the 450 Grummanites who work at the facility, Dyson said: "I couldn't have stuck my neck out for a better group of people. You're here and you're going to continue to be here because of the superior work you do."

Dyson told them that he and Grumman's other congressional supporters were mapping their strategy for when the budget goes before the full House at the end of this month. "We expect there will be a fight, but we'll be ready," he said.

Change Of Command. *Capt. James Aldrich (C) was recently sworn in as commanding officer of NAVPRO Grumman-Bethpage. Taking part in the ceremony were Vice Admiral Joseph Wilkinson (L), commander, NAVAIR, and Capt. Wendell Brown (R), NAVPRO outgoing commander. (Photo by Gerry Costello)*

Grumman Taking Off With Major Boeing Contract

A major investment in modernized detail parts manufacturing systems is paying off for Aircraft Systems. The division's Aerostructures unit used it to help the division win a major contract with Boeing. The contract will mean work for over 100 people in Buildings 2 and 3 in Bethpage for the next several years at least.

"This contract represents one of the early returns on the company's consolidation of divisions," says Tony D'Amico, program director in the Aerostructures unit. "The contract has enabled Grumman to spread divisional management and technical capabilities to give us a competitive rate for this type of work."

"We now have over 500 orders active in the shop," says Ralph Mastrole, the deputy general manager of Parts Fabrication. Work under the contract, which was signed earlier this year, calls for the Parts Fabrication Center to build complex detail parts using its capabilities in skin stretch, drop hammer and joggle (where metal is bent to step-like shapes).

Since the contract began, Boeing has expanded the requirements and added other types of parts for Grumman to build. People from Boeing Operations also helped Grumman operators in forming detail parts with Inconel, a hard metal that Parts Fabrication had not worked with before, according to Mastrole.

It will be several months before Parts Fabrication is up to full rate on the program, though it already is ahead of schedule, Mastrole says. Grumman has delivered about 100 of the 2,500 to 3,000 parts that the company expects to turn out for Boeing each year. The parts will be used for the 737-300, 747-400, 757 and 767 aircraft.

Grumman has been working under what's called an "emergent" contract, where Boeing supplies the work orders, material and tools for the parts. "Boeing has been very happy with what we have given them," Mastrole says. So much so, he says, "We are now negotiating a permanent contract where Boeing would give us the responsibility to order our own materials and build any tooling we would need to make parts."

Boeing has had to go to subcontractors for detail parts because it badly needs final assembly space in its own facilities to meet the airlines' demand for its planes, Mastrole says. This has created business opportunities for numerous other companies, he says, though Grumman and Lockheed are now Boeing's two biggest detail parts subcontractors.

Grumman competed against other subcontractors for this work and won the jobs because of its manufacturing flexibility and ability to produce critical parts quickly and in high volume, Mastrole says.

Board Elects Balinsky VP

On Thursday, July 20, the Grumman board of directors elected Ed Balinsky vice president of Mergers and Acquisitions. He reports directly to Chairman John O'Brien.

In his new post, he will be responsible for all mergers, acquisitions, and business line divestitures for the company, including coordinating the disposition of any major units or real estate, plant or equipment.

Bill Steenson, president of Paumanock Development; Stephen Dondero, president of Grumman Ventures, Inc.; and Fred Edwards, director of Mergers and Acquisitions, will report to Balinsky.

In addition, the board approved the election of Bill Wachino Jr. president of Grumman Credit Corporation; and Bill Ryan vice president. Wachino continues as assistant treasurer of Grumman Corporation.

The board also appointed Pat Barry, vice president-Boost Surveillance and Tracking System (BSTS) Programs in the Grumman Space Systems Division. He reports to Division President John Harrison.

Stuart Begins Work On New OV-1 Order

Grummanites in Florida have gone to work on the first of 17 OV-1D Mohawk surveillance aircraft under a follow-on Program Aircraft Restoration/Service Life Extension Program contract with the U.S. Army.

The Fiscal 1989 contract is worth about $16 million and means that Grummanites in Aircraft Systems' Stuart Operations will be working, at least through March of 1991, on upgrading the service life of these planes. The first plane will be delivered to the Army on May 31, 1990. The Grummanites are also working under a similar Fiscal 1988 contract for 12 planes. The first two of those were delivered on July 12.

The Grumman Mohawk is an Army veteran, and an important workhorse. "The OV-1 is the Army's only combat-designed, fixed wing aircraft that provides corps commanders with battlefield surveillance gathered from cameras, infrared sensors, side-looking airborne radar, and electronic intelligence sensors," says Program Director Jim Flowers.

It first flew in 1959. The production line didn't close until the end of 1970. In between, Grumman built 380 Mohawks in four major versions, all for the Army. The plane earned its combat wings during the Vietnam conflict.

A replacement aircraft won't be ready until the year 2006, when the Army hopes to field the Advanced Special Electronics Mission Aircraft. So the Mohawk upgrades will continue and other expected follow-on life extension work and the Multistage Improvement Program should keep Mohawk work going in Stuart through the 1990s.

The Army now has plans for 35 Mohawks to go through the multistage improvement program upgrade, and there is the possibility that the service will modernize its entire fleet of 98 OV-1D's and 25 RV-1D electronic surveillance aircraft.

Under the multistage improvement program, Grumman upgrades the Mohawk's avionics with new communication, navigation and aircraft survivability equipment as well as a new controls display system and an integrated flight control system.

The modernization also includes more powerful engines, an improved anti-icing system, a stall warning system, a flight recorder and a redesigned side-looking airborne radar.

Grumman recently completed a multistage improvement flight test program with the prototype at Calverton, Long Island. A final, five-flight test program is now being run at Stuart. After that the prototype will begin preliminary Army operational testing.

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Personals

We wish to extend our sincere appreciation and thanks to all our friends at Grumman for their thoughtfulness and kind expressions of sympathy during our recent loss of our son Ronald. **The Fossing Family**

I would like to thank all my friends, co-workers and ESO for the basket of fruit. Your thoughtfulness is greatly appreciated. **George Sillence**

We would like to express our sincere thanks to all of our friends at Grumman who helped us through the sudden passing of my husband Francis X. Ruzicka. Your cards, prayers, flowers and sincere expressions of love were greatly appreciated. **Irene Ruzicka, Diane, Paul, David and Gregory Zona**

Grummanites Remember First Moon Landing

UNIONDALE, N.Y., — "In the Lunar Module program, we didn't need laws to protect whistle blowers," said Joe Gavin, who headed Grumman's Lunar Module program in the Sixties and later became company president. "People were responsible as individuals, and our team fully understood the priority: that the LM had to work. We were determined, we weren't going to leave a crew sitting on the moon."

About 400 people turned out for a dinner recently to mark the 20th anniversary of the first moon landing, which took place on July 20, 1969. The dinner was held Saturday, July 15, at Long Island's Cradle of Aviation Museum, and was co-sponsored by the museum and the Long Island chapter of the American Institute for Aeronautics and Astronautics (AIAA).

In the crowd of people were many Grumman employees, retirees, and their families. Fred Haise, former Apollo astronaut and now president of Grumman Space Station Program Support Division, also spoke at the dinner.

Gavin noted that from its beginning in the early 1960s, Apollo had a clear goal: put a man on the moon by the end of the decade. "How many times in recent administrations have you heard people stand up and speak about something that's going to be done by the end of this decade? Today's long-term horizon is next year," said Gavin.

Designing the LM was an enormous undertaking. For starters, nobody knew what the surface of the moon was. Some astronomers theorized that it was covered with thick dust that would swallow up anything that landed on its surface. The LM would operate in a low-gravity, near-vacuum environment, and could not be fully flight tested before use.

"Looking back at our experience with the LM, there were times when we bumbled from accomplishment to accomplishment, but when it was all added up, it was a superb job of systems integration," said Gavin, "that is, making everything work the way it was supposed to.

"But the one thing I always felt was the most significant was the reliability," he said. "We could accept no unexplained failure in any part of any test. There had to be an understanding of it and something had to be done, so that failure would not happen again."

Countries must now cooperate more in scientific endeavors, including space. Gavin thinks international collaboration is needed to tackle the "greenhouse effect," the earth's warming caused by pollution in the atmosphere. He also called for a permanent base on the dark side of the moon, which would be the site of a powerful space telescope; unmanned expeditions to Mars; and later, a manned base on that planet, too.

"There have been new plans for space ventures about every third year since the end of Apollo, and it bothers me that we haven't been able to sort out what's really important — and then go do it," he said. "I hope in the long run, Apollo and the lunar missions will show that these things can be done — if indeed there is the will."

Haise talked about his experience aboard Apollo 13 in 1972, which almost didn't return to earth. Each Apollo spacecraft had three parts: command, service, and lunar modules. In lunar orbit, the lunar module separated and descended to the moon, then rejoined the other two. Once the astronauts moved back into the command module, the LM was jettisoned. The service module ferried the command module back to a point just before reentry into the earth's atmosphere, at which it too was jettisoned.

As Apollo 13 made its way toward the moon, an oxygen tank in the service module ruptured. Haise and the other two astronauts on board, Jack Swigert and Jim Lovell, moved into the Lunar Module. They remained in it for four days, using the LM's guidance and propulsion systems to guide the two remaining modules back on a course bound for earth.

"We knew right away, we had something bad," said Haise. "We also knew we wouldn't land on the moon. That was a great disappointment."

Haise noted some of the strange aspects of this protracted stay in space. For one thing, nobody had predicted it would be necessary to bring along blank paper — so the astronauts made notes on anything they could find. They also had to shut down the LM's thermal systems to conserve power, causing globs of condensed water to collect everywhere.

"After we landed, we talked to the people on the ship," he said. "We were all concerned that throughout the world, it would be taken negatively. Missions up until that point had been almost 100 percent successful. We were very elated that it was [perceived as] a fairly magical pullout of what could have been a real disaster."

Besides people who were directly associated with the LM program, the event drew quite a few people who were small children at the time. Roger Siedlicki, a material review board engineer in Building 2-Bethpage and publicity coordinator for the Long Island AIAA, was a 10-year-old astronomy buff in 1969.

"I was at a friend's home in upstate New York, and was disappointed because the TV reception was very poor," he recalled. "I took my nephew, who is now 10, to the anniversary dinner. He said we should have gotten further than the moon by now.

"The LM was really the first inter-celestial spaceship," he said. "It's quite an honor to be associated with the company that built it."

Marking A Milestone. *Among those celebrating the lunar landing anniversary were: Joe Gavin (L), past president of Grumman Corporation; Bill Rector (R), NASA's LM program director and now corporate vice president, Science Applications International Corporation; and Mrs. Rector (C). (Photo by Marie Trimborn)*

Kelly Addresses Japanese

While colleagues on Long Island were toasting the 20th anniversary of the first lunar landing, Data Systems Vice President Tom Kelly was sharing his experiences with the Japanese.

Kelly spent two weeks in the Far East, speaking to people from industry, academia, government, and the press. The title of his presentation was "From Lunar Landing To International Cooperation In Space."

He is now vice president-Information Resource Management. But as a Grumman project engineer in the early 1960s, Kelly's concepts and designs helped shape NASA's plans for the Lunar Module.

"The Apollo program opened the frontiers of the universe to human exploration, and provided much new scientific knowledge about the moon," said Kelly. "It was the engineering accomplishment of the century, and showed the heights human endeavor could achieve when properly motivated and organized."

Kelly also talked about the current U.S. space challenge: the Space Station *Freedom*. Japan is building an experimental module that will be aboard the station.

"Apollo laid the foundation for international space cooperation, particularly with the worldwide tracking network," said Kelly. "Today, we see the possibility of many benefits from international cooperation in manned space programs. We can share costs; we can transfer key technologies throughout the world; and most important, we can promote international understanding."

Fielding Questions. *Grumman Chairman John O'Brien answered questions at the July 14 pin meeting in Corporate Headquarters. Grummanites with 30 years of company service and up attended. (Photo by Bob Settles)*

I Heard It At The Pin Meeting

O'Brien: Don't Get Upset By Any Losses Or Cheered Up By Any Wins

During recent weeks, Grumman Chairman John O'Brien met three times with Grummanites at pin meetings, twice in Bethpage and once in Great River.

On the July 14 pin meeting in Bethpage, O'Brien commented on the previous day's vote in the Senate. "The battle's not over yet. As I've been telling you: It's a seven-game World Series. The battle will be all summer. I don't think you should get upset by any losses, or cheered up by any wins. It's nice to have the score 2 to 2. There are a lot of people who didn't think we'd get it that far."

The following is a sampling of the questions asked at the recent pin meetings.

Would your new management team and the current board consider a friendly merger as an option to strengthen Grumman and get us up to the same financial clout as a McDonnell Douglas or a Lockheed?

O'Brien: We have no plans to sell ourselves to anybody, no one to my knowledge is looking for us, and I have publicly announced that I am not interested in acquiring Chrysler. I think we can work our way out of our problems and we're doing an increasingly good job of doing that. No one could forecast the shifting of defense priorities as rapidly as it has shifted. Being from the Northeast, we do not have the political clout that some others do, but we're doing a very good job with our friends and relations that we develop. Our congressmen and senators are doing everything they possibly can.

Do the F-14D problems have any bearing on the closing of Building 1?

O'Brien: No, not really. The proposed closing of Building 1 has to do with shutting down the runway and developing the 200 or so acres of property around the runway. This will be done over a period of time. The plan includes Buildings 1 and 4; Building 1 wouldn't be affected for several years, around 1993. We plan to move the corporate airplanes over to Republic Airport.

Is Long Island Helicopter interested in our airport?

O'Brien: Not to my knowledge. We would keep a heliport in Bethpage for our convenience and for the Nassau County Police.

If we don't get the A-6, EA-6B and F-14D production orders, where would we remanufacture the 300 to 400 F-14A's?

O'Brien: First of all, we can't assume that there will be 300 to 400 airplanes modified by Grumman. The Navy's current plan is not to give them to Grumman — despite what Secretary Cheney said publicly. He stated that Grumman will not go under, it will be perfectly viable modifying F-14s.

Right now, the Navy intends to have the NARFs [Naval Air Rework Facilities] do it. Plus, they'd like to bid some of the work with us. We're trying to get as many of those F-14s through here as we can. However, we have not made any decision as to where the reworks will be done. If we have to go head to head with the NARFs for a significant part of the job, then there is no sense in competing with them here on Long Island.

It's not news that this is an expensive place to do rework or modifications. We'll fight every way we can to keep sufficient work here to keep our employment levels reasonable and to keep our talent available.

At the moment, we're doing nothing more than theoretical planning as to where to do the reworks because we're fighting to keep the F-14s there and delay the reworks for at least another year.

But remember, even if the '90 budget doesn't go, we've got two more calendar years of F-14s and A-6s to get out of here.

What do you see for Grumman in the next five years?

O'Brien: You must create several scenarios to answer that question.

If we keep the F-14 in the budget for a couple of years, we will not be shrinking. Hopefully, we will continue to be more profitable.

If the F-14 is not in the budget, and we have to compete for those reworks, it might be just as profitable but it takes more cash to run it, so we'd have to borrow some money.

I don't see us necessarily as a much smaller company because we have Joint STARS going into production, and that's a very high-dollar volume item. Number three aircraft is being contracted right now. The development program is going very well. So far, it's basically on a satisfactory schedule to the Air Force and nobody has challenged Joint STARS in the budget cuts at all. As for the Boost Surveillance and Tracking System (BSTS), I see us having a good shot at beating Lockheed.

Both those programs are $10 billion programs if we win them — but the business will be different from the business we've all grown up with.

We will not be building as many new airplanes as we are used to. We will be producing a lot of rework airplanes. I still see potential for Tomcat-21. I think the ATF is going to run into budget problems as well as design problems. I think it's going to be very difficult to produce a useful 50,000-pound airplane that has a $35 million fly-away cost. It's going to run into a lot of congressional flak.

I think the Navy is going to have a very tough time funding an NATF in the same time frame that they need to fund the Advanced Tactical Surveillance aircraft (ATS). If the choice were made today, the ATS would the first choice for new development, because the Navy needs a battle management system more than it needs a stealth fighter, or a stealth interceptor.

So I see lots of potential. Yet I see a tremendous amount of strain on all our people in the intervening period. As a corporation, I see us being reasonably successful. As an airplane designer and builder, I see us under a lot of stress. But I see us having the capability to compete very well for the ATS.

I just think that we have to get smarter. We have to understand the customer's needs more. We have to become more innovative and more flexible. We have to get the old Grumman innovation back. We have to build back our relationship with the buying community in the Navy. And, I don't mean the contracting officer,

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I Heard It At The Pin Meeting

(Continued from page 5)

I mean the engineering, the technical and the requirement communities.

I don't think there's reason for gloom and doom. I think we're going through a transition. It may be a transition that makes us a better corporation.

Everybody in the country wants to cut defense budgets right now. A survey said 70 percent of the people in the United States love what Gorbachev's doing and don't understand why we don't agree with him more. That's the way this country goes. That affects defense budgets.

Remember, in Washington, all they solve is one year at a time. Washington sort of epitomizes what Winston Churchill said: "Americans can always be depended upon to do the right thing – after they've exhausted every other possibility."

Could you comment on the FSX, where, in my opinion, we are selling our technology cheap to the Japanese?

O'Brien: I run into your opinion from other people in the aerospace industry and lots of people in Congress. Under both Ronald Reagan and George Bush, our country has not had a scientific advisor in a senior enough position in government to have influence. The State, Commerce, and Defense departments jockey for position, with conflicting opinions on what technologies we can or will sell. So the U.S. joins foreign governments on programs that it cancels a year later.

Before the FSX came about, the U.S. recognized that there were five fighters being developed in the world. We asked the British, French, and other European nations to join up with us, and very politely got told to take a walk. We then went to the Japanese and after much debate they said yes, we'll join with you — and that's the FSX as you and I know it. We may be giving the Japanese some technology, we may be helping them compete with us in the aerospace industry, but we may also be learning something. My opinion is that at this time, it's our only choice. The Japanese would have either done it alone or with the British, French, or Germans. Then we would have lost all control. This country needs policy as to how it will handle international relationships. Japan is obviously trying to get into the aerospace industry, Korea is following closely, the united European Community is being formed in 1992 — and the U.S. has no plan to deal with any of those developments.

Will Aircraft Systems Division be doing any of the vehicle engineering for Joint STARS?

O'Brien: We are trying to get some of the vehicle and systems-installation engineering on aircraft no. 3. We are working that out now with the Air Force. We could very well do some of the work here on Long Island.

If Building 25 is leased or sold, what will happen to the wind tunnel? Will it be moved?

O'Brien: We'll have to find a way to move it or disguise it. It's not what you and I would call an architectural wonder. Building 25 will not be sold but would be developed as part of the development of the runway — when we close the runway down. The people in 25 will be moved. That's why it remains basically empty.

What's the situation on the Grumman debt?

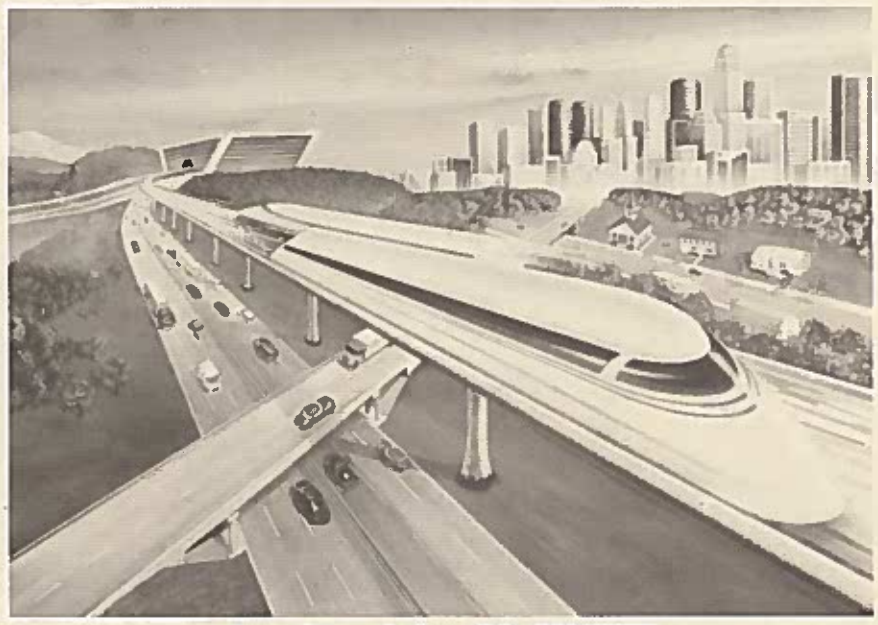
O'Brien: Right now we're doing much better at cash management. Our debt has probably peaked, but may go higher next year. Out of $900 million in debt, $400-500 million of it is due to changes in progress payments or income tax laws. For example, when the government changed progress payments from 90 percent to 75 percent, it automatically increased our borrowings $300 million per year. There are signs that the government is beginning to realize that it is liquidating the aerospace industry in the U.S., and it's starting to make some changes.

Will the big debt make Grumman a takeover target?

O'Brien: That's less likely, in my opinion. But other people say, debt isn't a problem for a cash rich company. It would be a tax advantage. Who knows what goes on in the minds of the takeover kings? But at the moment, I know of no one who is trying to take us over.

Reminder

Need to make a call to Grumman St. Augustine? The main switchboard number is 904-825-3300.



An artist rendering of the MAGLEV

Fast Track Train Studied

Grumman is a member of an advisory group to Senator Pat Moynihan (D-N.Y.) studying a train that may one day enable Americans to travel from city to city at speeds up to 325 m.p.h.

The train would be magnetically levitated — it would ride above a guideway, supported by powerful magnetic forces. There is yet no formal project to build the "MAGLEV" as such, but at a recent news conference, three U.S. senators called upon the Federal government to help finance its development. Sens. Moynihan, Harry Reid (D-Nev.), and Bob Graham (D-Fla.), Environment and Public Works committee members, said the U.S. can become the world leader if adequate funding is provided.

"The proposed goal is to build and operate two or more full scale MAGLEV demonstration tracks within four to five years," says Dr. Richard Gran, director-Advanced Concepts, Corporate Technology. "Each track will have a different design approach."

Gran and Michael Proise, technical advisor in Advanced Concepts, serve on the 16-member MAGLEV Technology Advisory Committee, which reports to the Senate group. MAGLEV would relieve congested highways and airports. It would also cut down on the burning of fuel, which releases carbon dioxide into the atmosphere and contributes to the "greenhouse effect," a global warming trend.

MAGLEV trains will be one of many commercial applications of superconductivity. Scientists have known for many years that at extreme zero (-460 degrees Kelvin), some compounds become "superconductors" — there is no resistance to electric current, no emission of heat, no energy loss. In recent years, scientists have been able to achieve this phenomenon at much higher temperatures, giving superconductivity more commercial potential.

However, MAGLEV need not wait for the higher temperature superconductors to become a reality, as was pointed out by the Moynihan committee. Japan has already demonstrated the feasibility of MAGLEV using low-temperature superconductors.

Superconductivity makes a MAGLEV train highly energy efficient. Superconducting magnets would also be the key to the train's levitation properties. Since there would be no contact between the vehicle and its guideway, greater speeds could be achieved and roadbed maintenance could be lessened or eliminated. MAGLEV is an American invention, but the Germans and Japanese are closer to actually using it. In fact, Grumman worked on a high-speed transportation system called "TAC/RV," which stood for Tracked Air Cushioned Research Vehicle, in the 1960s and 1970s. But in 1975, the project was scuttled by the Federal government due to lack of funds.

Besides funding the project, Congress must pass legislation approving interstate rights of way. But much of the MAGLEV system could parallel America's extensive interstate highways — either running down the median or alongside the road without interfering with normal highway operation. Such rights of way already exist along rural routes.

"First generation MAGLEV systems have worked at high speeds in Germany and Japan," Gran points out. "We must start now or the MAGLEV industry will be foreign dominated."

R. A. Acquaro

L. A. Anderson

T. Bamundo

R. Brame

R. G. Bressler

J. Buscarino

T. J. Carpenter

J. F. Cinquemani

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R. V. Hafner

M. T. Hearney

A. N. Hersey

G. J. Knight

L. Lengyel

S. Longo

Service Milestones

40

Harvey E. Abrams, San Diego, Technical Services
Edward C. Bennett, Bethpage, Aircraft Systems
Ludwig Blum Jr., Stuart, Aircraft Systems
Henry G. Bramwell, Calverton, Aircraft Systems
James L. Cunningham, Bethpage, Aircraft Systems
William J. Devine, Bethpage, Aircraft Systems
John Duggan, Bethpage, Aircraft Systems
James J. Dunn, Milledgeville, Aircraft Systems
Charles E. Frank, Bethpage, Aircraft Systems
Albert R. Grenci, Melville, Aircraft Systems
John G. Huber, Hicksville, Aircraft Systems
Frank Kowalesky Jr., Calverton, Aircraft Systems
Thomas J. Lashinsky, Bethpage, Aircraft Systems
Joseph M. Oakes Jr., Bethpage, Corporate Services
John G. Poli Jr., Bethpage, Aircraft Systems
Ernest S. Randall, Melbourne, Melbourne Systems
Robert Sagl, Calverton, Aircraft Systems
Frank Salentino, Bethpage, Aircraft Systems
Herbert R. Schmidt, Calverton, Aircraft Systems
William Schoppmeyer, Bethpage, Aircraft Systems
Wallace G. Schulein, Bethpage, Aircraft Systems

R. Maglione

V. Maiorana

P. A. McHugh

W. J. Meyer

T. Miller

G. Mujsce

Wallace Scott, Bethpage, Corporate Services
John F. Suss, Bethpage, Aircraft Systems
Eugene Watson, Bethpage, Aircraft Systems
Felix A. Zorskis, Bethpage, Aircraft Systems
Alexander J. Zuk, Bethpage, Aircraft Systems

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Robert G. Albertson, Bethpage, Aircraft Systems
Gerald J. Barbieri, Bethpage, Aircraft Systems
Martin C. Beltrami, Great River, Electronics Systems
Charles F. Broadway, Great River, Electronics Systems
Richard W. Corrigan, Milledgeville, Aircraft Systems
Paul Couluris, Bethpage, Grumman International
Francis A. D'Amico, Great River, Electronics Systems
Joseph M. DeSanto, Bethpage, Aircraft Systems
George H. Fincken, Bethpage, Aircraft Systems
Philip Fischer Jr., Bethpage, Corporate Services
Joseph F. Ivers, Melville, Aircraft Systems
Robert Keenan, Bethpage, Aircraft Systems
Philip J. Lagan, Great River, Electronics Systems
Joseph W. Moldashel Jr., Bethpage, Aircraft Systems
Victor L. Peckenschneider, Bethpage, Aircraft Systems
James Pope Jr., Bethpage, Aircraft Systems
Rudolph C. Ramcke, Bethpage, Aircraft Systems
Norman E. Reid, Stuart, Aircraft Systems
Raymond T. Rice, Bethpage, Aircraft Systems
Peter S. Salinder, Calverton, Aircraft Systems
Louis R. Sclafani, Great River, Electronics Systems
Donald R. Snell, Calverton, Aircraft Systems
Robert Sokolowski, Bethpage, Aircraft Systems
Charles E. Squires Jr., Bethpage, Aircraft Systems
Benjamin Telesca, Bethpage, Aircraft Systems

30

Arthur H. Badstuebner, Bethpage, Aircraft Systems
Steven Bank, Melville, Aircraft Systems
George W. Capua, Bethpage, Data Systems
Michael DiNoia, Bethpage, Aircraft Systems
Earl W. Freidank, Bethpage, Corporate Services
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Edward Lynch, Bethpage, Corporate Services

(Continued on page 8)

A Correction

In the last issue, these two Grummanites were misidentified. The 25-year anniversarians are Robert Elkins (L) of Aircraft Systems and Wendell McClure (R) of Aircraft Systems; both work in Building 2.

Service Milestones

(Continued from page 7)

Robert W. Lyon, Bethpage, Aircraft Systems
William H. Lyons, Melville, Aircraft Systems
Stanley V. Mazur, Bethpage, Aircraft Systems
Robert F. Mehl, Bethpage, Aircraft Systems
George E. Mirecki, Hicksville, Aircraft Systems
John R. Mohlenhoff, Great River, Electronics Systems
Wilbert F. Muller, Melville, Aircraft Systems
Joseph Nardi, Bethpage, Aircraft Systems
George R. Peck, Calverton, Aircraft Systems
Raymond Plawski, Bethpage, Aircraft Systems
Lawrence A. Powers Jr., Melville, Aircraft Systems
Robert P. Robinson, Bethpage, Aircraft Systems
Peter Rosato, China Lake, Aircraft Systems
Vincent C. Saputo, Bethpage, Aircraft Systems
Michael J. Sheehan, Bethpage, Aircraft Systems
James C. Sherry, Bethpage, Aircraft Systems
Eugene E. Stapleton, Calverton, Aircraft Systems
Walter H. Steigele, Bethpage, Corporate Services
Vincent J. Verteramo Jr., Calverton, Aircraft Systems

M. M. Myles

J. J. O'Connell

J. E. Oest

E. M. Peterson

R. P. Pizzo

E. L Plenty

C. Rissland

S. A. Rocchio

A. Spingola

R. H. St.Denis

W. E. Staab

J. J. Stalzer

Harvey Weiss, Calverton, Aircraft Systems
Kenneth G. Wendel, Bethpage, Aircraft Systems

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Ralph A. Acquaro, Bethpage, Aircraft Systems
Leonard A. Anderson Jr., Bethpage, Aircraft Systems
Thomas Bamundo, Bethpage, Aircraft Systems
Edwin H. Binder, Bethpage, Aircraft Systems
Roger Brame, Marathon, Allied
Edward G. Branch, Calverton, Corporate Services
Richard G. Bressler, Calverton, Aircraft Systems
Josephine Buscarino, Bethpage, Corporate Services

B. T. Stambaugh

E. A. Stroud

E. J. Trowbridge

W. Worth

Francis S. Carl, Bethpage, Aircraft Systems
Thomas J. Carpenter, Bethpage, Space Systems
Joseph F. Cinquemani, Bethpage, Aircraft Systems
Thomas F. Conlon, Bethpage, Corporate Services
Joseph P. DeRosa, Bethpage, Grumman Corporation
Frederick J. Dick, Melville, Aircraft Systems
Edwin C. Duncan Jr., Bethpage, Aircraft Systems
Richard Ehlinger, Calverton, Data Systems
Russell T. Ewers Jr., Milledgeville, Aircraft Systems
Frederick C. Fahner, Melville, Aircraft Systems
Raymond Fischer, Calverton, Aircraft Systems
Edward J. Franits, Melbourne, Melbourne Systems
Henry H. Gerkens, Bethpage, Aircraft Systems
Ronald Glass, Bethpage, Corporate Services
Rita V. Hafner, Bethpage, Aircraft Systems
Michael T. Hearney, Melville, Aircraft Systems
George B. Heaslip, Bethpage, Corporate Services
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Gordon J. Knight, Great River, Electronics Systems
Louis Lengyel, Melville, Aircraft Systems
Sam Longo, Bethpage, Aircraft Systems
Roseanne Maglione, Bethpage, Aircraft Systems
Vincent Maiorana, Bethpage, Corporate Services
Patrick A. McHugh, Bethpage, Aircraft Systems
William J. Meyer, Point Mugu, Aircraft Systems
Thomas Miller, Bethpage, Aircraft Systems
George Mujsce, Calverton, Aircraft Systems
Martin M. Myles, Melville, Aircraft Systems
John J. O'Connell, Melville, Aircraft Systems
John E. Oest, Bethpage, Aircraft Systems
Edward M. Peterson, Bethpage, Aircraft Systems
Raymond C. Pinter, Calverton, Aircraft Systems
Robert P. Pizzo, Great River, Electronics Systems
Ethel L. Plenty, Bethpage, Aircraft Systems
Carl Rissland, Calverton, Aircraft Systems
Sylvester A. Rocchio, Point Mugu, Aircraft Systems
Joseph T. Ryan, Great River, Electronics Systems
James F. Sheehan Jr., Melville, Aircraft Systems
Anthony Spingola, Hicksville, Aircraft Systems
Richard H. St.Denis, Calverton, Aircraft Systems
William E. Staab, Melville, Aircraft Systems
Joseph J. Stalzer, Melville, Electronics Systems
Billie T. Stambaugh, Sturgis, Allied
Donald S. Stone, Bethpage, Aircraft Systems
Edward A. Stroud, Melville, Electronics Systems
Eileen J. Trowbridge, Bethpage, Aircraft Systems
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